

GENEN39766-0100P1.TXT

SEQUENCE LISTING

<110> Ashkenazi, Avi J.  
Fong, Sherman  
Goddard, Audrey  
Gurney, Austin L.  
Napier, Mary A.  
Tumas, Daniel  
Van Lookren, Menno  
Wood, William I.

<120> USE OF A33 ANTIGENS AND JAM-IT

<130> 39766/0100P1

<150> US/10/265,542

<151> 2002-10-03

<150> PCT/US00/04414

<151> 2000-02-22

<150> PCT/US00/14042

<151> 2000-05-22

<150> PCT/US00/32678

<151> 2000-12-01

<150> US/09/254,465

<151> 1999-03-05

<150> PCT/US99/05028

<151> 1999-03-08

<160> 36

<170> FastSEQ for Windows Version 4.0

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<212> PRT

<213> Homo sapiens

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Asp Gln Gly Asp Thr Thr Arg Leu Val Cys Tyr Asn Asn Lys Ile Thr
 65     70     75     80
Ala Ser Tyr Glu Asp Arg Val Thr Phe Leu Pro Thr Gly Ile Thr Phe
 85     90     95
Lys Ser Val Thr Arg Glu Asp Thr Gly Thr Tyr Thr Cys Met Val Ser
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Glu Glu Gly Gly Asn Ser Tyr Gly Glu Val Lys Val Lys Leu Ile Val
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Thr Thr Gly Glu Leu Val Phe Asp Pro Leu Ser Ala Ser Asp Thr Gly
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Glu Tyr Ser Cys Glu Ala Arg Asn Gly Tyr Gly Thr Pro Met Thr Ser
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Asn Ala Val Arg Met Glu Ala Val Glu Arg Asn Val Gly Val Ile Val
225      230      235      240
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      35      40      45
Tyr Thr Gln Val Leu Val Lys Trp Leu Val Gln Arg Gly Ser Asp Pro
      50      55      60
Val Thr Ile Phe Leu Arg Asp Ser Ser Gly Asp His Ile Gln Gln Ala
65      70      75      80
Lys Tyr Gln Gly Arg Leu His Val Ser His Lys Val Pro Gly Asp Val
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Ser Leu Gln Leu Ser Thr Leu Glu Met Asp Asp Arg Ser His Tyr Thr
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Cys Glu Val Thr Trp Gln Thr Pro Asp Gly Asn Gln Val Val Arg Asp
      115      120      125
Lys Ile Thr Glu Leu Arg Val Gln Lys Leu Ser Val Ser Lys Pro Thr
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145      150      155      160
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Trp Tyr Lys Gln Thr Asn Asn Gln Glu Pro Ile Lys Val Ala Thr
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Leu Ser Thr Leu Leu Phe Lys Pro Ala Val Ile Ala Asp Ser Gly Ser
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Tyr Phe Cys Thr Ala Lys Gly Gln Val Gly Ser Glu Gln His Ser Asp
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Ile Val Lys Phe Val Val Lys Asp Ser Ser Lys Leu Lys Thr Lys
225      230      235      240
Thr Glu Ala Pro Thr Thr Met Thr Tyr Pro Leu Lys Ala Thr Ser Thr
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Val Lys Gln Ser Trp Asp Trp Thr Thr Asp Met Asp Gly Tyr Leu Gly
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Thr Ser Ser Arg Glu Gly Leu Ile Gln Trp Asp Lys Leu Leu Thr
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His Gly Glu Leu Tyr Lys Asn Arg Val Ser Ile Ser Asn Asn Ala Glu
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Gln Ser Asp Ala Ser Ile Thr Ile Asp Gln Leu Thr Met Ala Asp Asn
100 105 110
Gly Thr Tyr Glu Cys Ser Val Ser Leu Met Ser Asp Leu Glu Gly Asn
115 120 125
Thr Lys Ser Arg Val Arg Leu Val Leu Val Pro Pro Ser Lys Pro
130 135 140
Glu Cys Gly Ile Glu Gly Glu Thr Ile Ile Gly Asn Asn Ile Gln Leu
145 150 155 160
Thr Cys Gln Ser Lys Glu Gly Ser Pro Thr Pro Gln Tyr Ser Trp Lys
165 170 175
Arg Tyr Asn Ile Leu Asn Gln Glu Gln Pro Leu Ala Gln Pro Ala Ser
180 185 190
Gly Gln Pro Val Ser Leu Lys Asn Ile Ser Thr Asp Thr Ser Gly Tyr
195 200 205
Tyr Ile Cys Thr Ser Ser Asn Glu Glu Gly Thr Gln Phe Cys Asn Ile
210 215 220
Thr Val Ala Val Arg Ser Pro Ser Met Asn Val Ala Leu Tyr Val Gly
225 230 235 240
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245 250 255
Tyr Cys Cys Cys Cys Arg Gly Lys Asp Asp Asn Thr Glu Asp Lys Glu
260 265 270
Asp Ala Arg Pro Asn Arg Glu Ala Tyr Glu Glu Pro Pro Glu Gln Leu
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Arg Glu Leu Ser Arg Glu Arg Glu Glu Glu Asp Asp Tyr Arg Gln Glu
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Ala Cys Lys Thr Pro Lys Lys Thr Val Ser Ser Arg Leu Glu Trp Lys
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Lys Leu Gly Arg Ser Val Ser Phe Val Tyr Tyr Gln Gln Thr Leu Gln
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Gly Asp Phe Lys Asn Arg Ala Glu Met Ile Asp Phe Asn Ile Arg Ile
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Lys Asn Val Thr Arg Ser Asp Ala Gly Lys Tyr Arg Cys Glu Val Ser
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Ala Pro Ser Glu Gln Gly Gln Asn Leu Glu Glu Asp Thr Val Thr Leu
115 120 125
Glu Val Leu Val Ala Pro Ala Val Pro Ser Cys Glu Val Pro Ser Ser
130 135 140
Ala Leu Ser Gly Thr Val Val Glu Leu Arg Cys Gln Asp Lys Glu Gly
145 150 155 160
Asn Pro Ala Pro Glu Tyr Thr Trp Phe Lys Asp Gly Ile Arg Leu Leu
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Glu Asn Pro Arg Leu Gly Ser Gln Ser Thr Asn Ser Ser Tyr Thr Met
180 185 190
Asn Thr Lys Thr Gly Thr Leu Gln Phe Asn Thr Val Ser Lys Leu Asp
195 200 205
Thr Gly Glu Tyr Ser Cys Glu Ala Arg Asn Ser Val Gly Tyr Arg Arg
210 215 220
Cys Pro Gly Lys Arg Met Gln Val Asp Asp Leu Asn Ile Ser Gly Ile
225 230 235 240
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35 40 45  
Cys Thr Tyr Ser Gly Phe Ser Ser Pro Arg Val Glu Trp Lys Phe Val  
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65 70 75 80  
Pro Tyr Ala Asp Arg Val Thr Phe Ser Ser Ser Gly Ile Thr Phe Ser  
85 90 95  
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130 135 140  
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145 150 155 160  
Ser Glu Tyr Ser Trp Phe Lys Asp Gly Ile Ser Met Leu Thr Ala Asp  
165 170 175  
Ala Lys Lys Thr Arg Ala Phe Met Asn Ser Ser Phe Thr Ile Asp Pro  
180 185 190  
Lys Ser Gly Asp Leu Ile Phe Asp Pro Val Thr Ala Phe Asp Ser Gly  
195 200 205  
Glu Tyr Tyr Cys Gln Ala Gln Asn Gly Tyr Gly Thr Ala Met Arg Ser  
210 215 220  
Glu Ala Ala His Met Asp Ala Val Glu Leu Asn Val Gly Gly Ile Val  
225 230 235 240  
Ala Ala Val Leu Val Thr Leu Ile Leu Leu Gly Leu Leu Ile Phe Gly  
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agggatcagg	aaggaatcct	gggtatgcca	ttgacttccc	ttctaagtag	acagcaaaaa	1260
tggcgggggt	cgcaggaatc	tgcactcaac	tgcccacctg	gctggcaggg	atctttgaat	1320
aggtatcttg	agcttgggtc	tgggctcttt	ccttgtgtac	tgacgaccag	ggccagctgt	1380
tctagatggg	gaattagagg	ctagagcggc	tgaatgggtt	gtttggtgat	gacactgggg	1440
tccttccatc	tctggggccc	actctcttct	gtcttcccat	gggaagtgcc	actgggatcc	1500
ctctgccctg	tcctcctgaa	tacaagctga	ctgacattga	ctgtgtctgt	ggaaaatggg	1560
agctcttgtt	gtggagagca	tagtaaattt	tcagagaact	tgaagcgaaa	aggatttaaa	1620
accgctgctc	taaagaaaag	aaaactggag	gctgggcgca	gtggctcacg	cctgtaatcc	1680
cagaggctga	ggcaggcgga	tcacctgagg	tcgggagttc	gggatcagcc	tgaccaacat	1740
ggagaaaccc	tgctggaaat	acagagttag	ccaggcatgg	tggtgcatgc	ctgtagtccc	1800
agctgctcag	gagcctggca	acaagagcaa	aactccagct	ca		1842

<210> 12  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 12  
 tcgctggagct gtgttctgtt tccc 24

<210> 13  
 <211> 50  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 13  
 tgatcgcat ggggacaaag gcgcaagctc gagaggaaac tggtgtgcct 50

<210> 14  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 14  
 acacctgggtt caaagatggg 20

<210> 15  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide probe

<400> 15  
 taggaagagt tgctgaaggc acgg 24



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<210> 16  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide probe  
  
 <400> 16  
 ttgccttact caggtgctac 20  
  
 <210> 17  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide probe  
  
 <400> 17  
 actcagcagt ggtaggaaag 20  
  
 <210> 18  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide probe  
  
 <400> 18  
 tatccctcca attgagcacc ctgg 24  
  
 <210> 19  
 <211> 21  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide probe  
  
 <400> 19  
 gtcggaagac atccaacaa g 21  
  
 <210> 20  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide probe  
  
 <400> 20  
 cttcacaatg tcgctgtgct gctc 24  
  
 <210> 21  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic oligonucleotide probe

GENEN39766-0100P1.TXT

<400> 21  
agccaaatcc agcagctggc ttac

24

<210> 22  
<211> 50  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic oligonucleotide probe

<400> 22  
tggatgaccg gagccactac acgtgtgaag tcacctggca gactcctgat

50

<210> 23  
<211> 260  
<212> PRT  
<213> Homo sapiens

<400> 23  
Leu Ala Leu Gly Ser Val Thr Val His Ser Ser Glu Pro Glu Val Arg  
1 5 10 15  
Ile Pro Glu Asn Asn Pro Val Lys Leu Ser Cys Ala Tyr Ser Gly Phe  
20 25 30  
Ser Ser Pro Arg Val Glu Trp Lys Phe Asp Gln Gly Asp Thr Thr Arg  
35 40 45  
Leu Val Cys Tyr Asn Asn Lys Ile Thr Ala Ser Tyr Glu Asp Arg Val  
50 55 60  
Thr Phe Leu Pro Thr Gly Ile Thr Phe Lys Ser Val Thr Arg Glu Asp  
65 70 75 80  
Thr Gly Thr Tyr Thr Cys Met Val Ser Glu Glu Gly Gly Asn Ser Tyr  
85 90 95  
Gly Glu Val Lys Val Lys Leu Ile Val Leu Val Pro Pro Ser Lys Pro  
100 105 110  
Thr Val Asn Ile Pro Ser Ser Ala Thr Ile Gly Asn Arg Ala Val Leu  
115 120 125  
Thr Cys Ser Glu Gln Asp Gly Ser Pro Pro Ser Glu Tyr Thr Trp Phe  
130 135 140  
Lys Asp Gly Ile Val Met Pro Thr Asn Pro Lys Ser Thr Arg Ala Phe  
145 150 155 160  
Ser Asn Ser Ser Tyr Val Leu Asn Pro Thr Gly Glu Leu Val Phe  
165 170 175  
Asp Pro Leu Ser Ala Ser Asp Thr Gly Glu Tyr Ser Cys Glu Ala Arg  
180 185 190  
Asn Gly Tyr Gly Thr Pro Met Thr Ser Asn Ala Val Arg Met Glu Ala  
195 200 205  
Val Glu Arg Asn Val Gly Val Ile Val Ala Ala Val Leu Val Thr Leu  
210 215 220  
Ile Leu Leu Gly Ile Leu Val Phe Gly Ile Trp Phe Ala Tyr Ser Arg  
225 230 235 240  
Gly His Phe Asp Arg Thr Lys Lys Gly Thr Ser Ser Lys Lys Val Ile  
245 250 255  
Tyr Ser Gln Pro  
260

<210> 24  
<211> 268  
<212> PRT  
<213> Homo sapiens

<400> 24

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Val Thr Val Asp Ala Ile Ser Val Glu Thr Pro Gln Asp Val Leu Arg
1      5      10      15
Ala Ser Gln Gly Lys Ser Val Thr Leu Pro Cys Thr Tyr His Thr Ser
20      25      30
Thr Ser Ser Arg Glu Gly Leu Ile Gln Trp Asp Lys Leu Leu Thr
35      40      45
His Thr Glu Arg Val Val Ile Trp Pro Phe Ser Asn Lys Asn Tyr Ile
50      55      60
His Gly Glu Leu Tyr Lys Asn Arg Val Ser Ile Ser Asn Asn Ala Glu
65      70      75      80
Gln Ser Asp Ala Ser Ile Thr Ile Asp Gln Leu Thr Met Ala Asp Asn
85      90      95
Gly Thr Tyr Glu Cys Ser Val Ser Leu Met Ser Asp Leu Glu Gly Asn
100     105     110
Thr Lys Ser Arg Val Arg Leu Leu Val Leu Val Pro Pro Ser Lys Pro
115     120     125
Glu Cys Gly Ile Glu Gly Glu Thr Ile Ile Gly Asn Asn Ile Gln Leu
130     135     140
Thr Cys Gln Ser Lys Glu Gly Ser Pro Thr Pro Gln Tyr Ser Trp Lys
145     150     155     160
Arg Tyr Asn Ile Leu Asn Gln Glu Gln Pro Leu Ala Gln Pro Ala Ser
165     170     175
Gly Gln Pro Val Ser Leu Lys Asn Ile Ser Thr Asp Thr Ser Gly Tyr
180     185     190
Tyr Ile Cys Thr Ser Ser Asn Glu Glu Gly Thr Gln Phe Cys Asn Ile
195     200     205
Thr Val Ala Val Arg Ser Pro Ser Met Asn Val Ala Leu Tyr Val Gly
210     215     220
Ile Ala Val Gly Val Val Ala Ala Leu Ile Ile Ile Gly Ile Ile Ile
225     230     235     240
Tyr Cys Cys Cys Cys Arg Gly Lys Asp Asp Asn Thr Glu Asp Lys Glu
245     250     255
Asp Ala Arg Pro Asn Arg Glu Ala Tyr Glu Glu Pro
260     265

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<210> 25  
 <211> 263  
 <212> PRT  
 <213> Homo sapiens

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<400> 25
Leu Cys Ser Leu Ala Leu Gly Ser Val Thr Val His Ser Ser Glu Pro
1      5      10      15
Glu Val Arg Ile Pro Glu Asn Asn Pro Val Lys Leu Ser Cys Ala Tyr
20      25      30
Ser Gly Phe Ser Ser Pro Arg Val Glu Trp Lys Phe Asp Gln Gly Asp
35      40      45
Thr Thr Arg Leu Val Cys Tyr Asn Asn Lys Ile Thr Ala Ser Tyr Glu
50      55      60
Asp Arg Val Thr Phe Leu Pro Thr Gly Ile Thr Phe Lys Ser Val Thr
65      70      75      80
Arg Glu Asp Thr Gly Thr Tyr Thr Cys Met Val Ser Glu Glu Gly Gly
85      90      95
Asn Ser Tyr Gly Glu Val Lys Val Lys Leu Ile Val Leu Val Pro Pro
100     105     110
Ser Lys Pro Thr Val Asn Ile Pro Ser Ser Ala Thr Ile Gly Asn Arg
115     120     125
Ala Val Leu Thr Cys Ser Glu Gln Asp Gly Ser Pro Pro Ser Glu Tyr
130     135     140
Thr Trp Phe Lys Asp Gly Ile Val Met Pro Thr Asn Pro Lys Ser Thr
145     150     155     160
Arg Ala Phe Ser Asn Ser Ser Tyr Val Leu Asn Pro Thr Thr Gly Glu
165     170     175

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```

      165      170      175
Leu Val Phe Asp Pro Leu Ser Ala Ser Asp Thr Gly Glu Tyr Ser Cys
      180      185      190
Glu Ala Arg Asn Gly Tyr Gly Thr Pro Met Thr Ser Asn Ala Val Arg
      195      200      205
Met Glu Ala Val Glu Arg Asn Val Gly Val Ile Val Ala Ala Val Leu
      210      215      220
Val Thr Leu Ile Leu Leu Gly Ile Leu Val Phe Gly Ile Trp Phe Ala
225      230      235      240
Tyr Ser Arg Gly His Phe Asp Arg Thr Lys Lys Gly Thr Ser Ser Lys
      245      250      255
Lys Val Ile Tyr Ser Gln Pro
      260

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<210> 26  
 <211> 273  
 <212> PRT  
 <213> Homo sapiens

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<400> 26
Leu Cys Ala Val Arg Val Thr Val Asp Ala Ile Ser Val Glu Thr Pro
1      5      10      15
Gln Asp Val Leu Arg Ala Ser Gln Gly Lys Ser Val Thr Leu Pro Cys
      20      25      30
Thr Tyr His Thr Ser Thr Ser Ser Arg Glu Gly Leu Ile Gln Trp Asp
      35      40      45
Lys Leu Leu Thr His Thr Glu Arg Val Val Ile Trp Pro Phe Ser
      50      55      60
Asn Lys Asn Tyr Ile His Gly Glu Leu Tyr Lys Asn Arg Val Ser Ile
65      70      75      80
Ser Asn Asn Ala Glu Gln Ser Asp Ala Ser Ile Thr Ile Asp Gln Leu
      85      90      95
Thr Met Ala Asp Asn Gly Thr Tyr Glu Cys Ser Val Ser Leu Met Ser
      100      105      110
Asp Leu Glu Gly Asn Thr Lys Ser Arg Val Arg Leu Leu Val Leu Val
      115      120      125
Pro Pro Ser Lys Pro Glu Cys Gly Ile Glu Gly Glu Thr Ile Ile Gly
      130      135      140
Asn Asn Ile Gln Leu Thr Cys Gln Ser Lys Glu Gly Ser Pro Thr Pro
145      150      155      160
Gln Tyr Ser Trp Lys Arg Tyr Asn Ile Leu Asn Gln Glu Gln Pro Leu
      165      170      175
Ala Gln Pro Ala Ser Gly Gln Pro Val Ser Leu Lys Asn Ile Ser Thr
      180      185      190
Asp Thr Ser Gly Tyr Tyr Ile Cys Thr Ser Ser Asn Glu Glu Gly Thr
      195      200      205
Gln Phe Cys Asn Ile Thr Val Ala Val Arg Ser Pro Ser Met Asn Val
      210      215      220
Ala Leu Tyr Val Gly Ile Ala Val Gly Val Val Ala Ala Leu Ile Ile
225      230      235      240
Ile Gly Ile Ile Ile Tyr Cys Cys Cys Cys Arg Gly Lys Asp Asp Asn
      245      250      255
Thr Glu Asp Lys Glu Asp Ala Arg Pro Asn Arg Glu Ala Tyr Glu Glu
      260      265      270
Pro

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<210> 27  
 <211> 413  
 <212> DNA  
 <213> Homo sapiens

GENEN39766-0100P1.TXT

<400> 27  
ctcgagccgc tcgagccgtg cggggaaata tcgttgtaga gttagtgcc catctgagca 60  
aggccaaaac ctggaagagg atacagtcac tctggaagta ttagtggtc cagcagttcc 120  
atcatgtgaa gtaccctctt ctgctctgag tggaaactgt gtagagctac gatgtcaaga 180  
caaagaaggg aatccagctc ctgaatacac atgggtttaag gatggcatcc gtttgctaga 240  
aaatcccaga cttggctccc aaagcaccaa cagtcatac acaatgaata caaaaactgg 300  
aactctgcaa ttttaatactg tttccaaact ggacactgga gaatattcct gtgaagcccg 360  
caattctgtt ggatatcgca ggtgtcctgg ggaaacgaat gcaagtagat gat 413

<210> 28

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 28

atcgttgtga agttagtgcc cc 22

<210> 29

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 29

acctgcgata tccaacagaa ttg 23

<210> 30

<211> 48

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 30

ggaagaggat acagtcactc tggaagtatt agtggctcca gcagttcc 48

<210> 31

<211> 310

<212> PRT

<213> Homo sapiens

<400> 31

Met	Ala	Leu	Arg	Arg	Pro	Pro	Arg	Leu	Arg	Leu	Cys	Ala	Arg	Leu	Pro
1				5				10					15		
Asp	Phe	Phe	Leu	Leu	Leu	Phe	Arg	Gly	Cys	Leu	Ile	Gly	Ala	Val	
			20				25					30			
Asn	Leu	Lys	Ser	Ser	Asn	Arg	Thr	Pro	Val	Val	Gln	Glu	Phe	Glu	Ser
		35					40				45				
Val	Glu	Leu	Ser	Cys	Ile	Ile	Thr	Asp	Ser	Gln	Thr	Ser	Asp	Pro	Arg
	50				55					60					
Ile	Glu	Trp	Lys	Lys	Ile	Gln	Asp	Glu	Gln	Thr	Tyr	Val	Phe	Phe	
65					70			75					80		
Asp	Asn	Lys	Ile	Gln	Gly	Asp	Leu	Ala	Gly	Arg	Ala	Glu	Ile	Leu	Gly
			85				90					95			
Lys	Thr	Ser	Leu	Lys	Ile	Trp	Asn	Val	Thr	Arg	Arg	Asp	Ser	Ala	Leu
			100				105					110			

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Tyr Arg Cys Glu Val Val Ala Arg Asn Asp Arg Lys Glu Ile Asp Glu  
115 120 125  
Ile Val Ile Glu Leu Thr Val Gln Val Lys Pro Val Thr Pro Val Cys  
130 135 140  
Arg Val Pro Lys Ala Val Pro Val Gly Lys Met Ala Thr Leu His Cys  
145 150 155 160  
Gln Glu Ser Glu Gly His Pro Arg Pro His Tyr Ser Trp Tyr Arg Asn  
165 170 175  
Asp Val Pro Leu Pro Thr Asp Ser Arg Ala Asn Pro Arg Phe Arg Asn  
180 185 190  
Ser Ser Phe His Leu Asn Ser Glu Thr Gly Thr Leu Val Phe Thr Ala  
195 200 205  
Val His Lys Asp Asp Ser Gly Gln Tyr Tyr Cys Ile Ala Ser Asn Asp  
210 215 220  
Ala Gly Ser Ala Arg Cys Glu Glu Gln Glu Met Glu Val Tyr Asp Leu  
225 230 235 240  
Asn Ile Gly Gly Ile Ile Gly Gly Val Leu Val Val Leu Ala Val Leu  
245 250 255  
Ala Leu Ile Thr Leu Gly Ile Cys Cys Ala Tyr Arg Arg Gly Tyr Phe  
260 265 270  
Ile Asn Asn Lys Gln Asp Gly Glu Ser Tyr Lys Asn Pro Gly Lys Pro  
275 280 285  
Asp Gly Val Asn Tyr Ile Arg Thr Asp Glu Glu Gly Asp Phe Arg His  
290 295 300 305  
Lys Ser Ser Phe Val Ile  
305 310

<210> 32  
<211> 399  
<212> PRT  
<213> Homo sapiens

<400> 32  
Met Gly Ile Leu Leu Gly Leu Leu Leu Leu Gly His Leu Thr Val Asp  
1 5 10 15  
Thr Tyr Gly Arg Pro Ile Leu Glu Val Pro Glu Ser Val Thr Gly Pro  
20 25 30  
Trp Lys Gly Asp Val Asn Leu Pro Cys Thr Tyr Asp Pro Leu Gln Gly  
35 40 45  
Tyr Thr Gln Val Leu Val Lys Trp Leu Val Gln Arg Gly Ser Asp Pro  
50 55 60  
Val Thr Ile Phe Leu Arg Asp Ser Ser Gly Asp His Ile Gln Gln Ala  
65 70 75 80  
Lys Tyr Gln Gly Arg Leu His Val Ser His Lys Val Pro Gly Asp Val  
85 90 95  
Ser Leu Gln Leu Ser Thr Leu Glu Met Asp Asp Arg Ser His Tyr Thr  
100 105 110  
Cys Glu Val Thr Trp Gln Thr Pro Asp Gly Asn Gln Val Val Arg Asp  
115 120 125  
Lys Ile Thr Glu Leu Arg Val Gln Lys Leu Ser Val Ser Lys Pro Thr  
130 135 140  
Val Thr Thr Gly Ser Gly Tyr Gly Phe Thr Val Pro Gln Gly Met Arg  
145 150 155 160  
Ile Ser Leu Gln Cys Gln Ala Arg Gly Ser Pro Pro Ile Ser Tyr Ile  
165 170 175  
Trp Tyr Lys Gln Thr Asn Asn Gln Glu Pro Ile Lys Val Ala Thr  
180 185 190  
Leu Ser Thr Leu Leu Phe Lys Pro Ala Val Ile Ala Asp Ser Gly Ser  
195 200 205  
Tyr Phe Cys Thr Ala Lys Gly Gln Val Gly Ser Glu Gln His Ser Asp  
210 215 220  
Ile Val Lys Phe Val Val Lys Asp Ser Ser Lys Leu Leu Lys Thr Lys

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225      230      235      240
Thr Glu Ala Pro Thr Thr Met Thr Tyr Pro Leu Lys Ala Thr Ser Thr
245      250      255
Val Lys Gln Ser Trp Asp Trp Thr Thr Asp Met Asp Gly Tyr Leu Gly
260      265      270
Glu Thr Ser Ala Gly Pro Gly Lys Ser Leu Pro Val Phe Ala Ile Ile
275      280      285
Leu Ile Ile Ser Leu Cys Cys Met Val Val Phe Thr Met Ala Tyr Ile
290      295      300
Met Leu Cys Arg Lys Thr Ser Gln Gln Glu His Val Tyr Glu Ala Ala
305      310      315      320
Arg Ala His Ala Arg Glu Ala Asn Asp Ser Gly Glu Thr Met Arg Val
325      330      335
Ala Ile Phe Ala Ser Gly Cys Ser Ser Asp Glu Pro Thr Ser Gln Asn
340      345      350
Leu Gly Asn Asn Tyr Ser Asp Glu Pro Cys Ile Gly Gln Glu Tyr Gln
355      360      365
Ile Ile Ala Gln Ile Asn Gly Asn Tyr Ala Arg Leu Leu Asp Thr Val
370      375      380
Pro Leu Asp Tyr Glu Phe Leu Ala Thr Glu Gly Lys Ser Val Cys
385      390      395

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<210> 33  
 <211> 305  
 <212> PRT  
 <213> Homo sapiens

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<400> 33
Met Gly Ile Leu Leu Gly Leu Leu Leu Leu Gly His Leu Thr Val Asp
1      5      10      15
Thr Tyr Gly Arg Pro Ile Leu Glu Val Pro Glu Ser Val Thr Gly Pro
20      25      30
Trp Lys Gly Asp Val Asn Leu Pro Cys Thr Tyr Asp Pro Leu Gln Gly
35      40      45
Tyr Thr Gln Val Leu Val Lys Trp Leu Val Gln Arg Gly Ser Asp Pro
50      55      60
Val Thr Ile Phe Leu Arg Asp Ser Ser Gly Asp His Ile Gln Gln Ala
65      70      75      80
Lys Tyr Gln Gly Arg Leu His Val Ser His Lys Val Pro Gly Asp Val
85      90      95
Ser Leu Gln Leu Ser Thr Leu Glu Met Asp Asp Arg Ser His Tyr Thr
100      105      110
Cys Glu Val Thr Trp Gln Thr Pro Asp Gly Asn Gln Val Val Arg Asp
115      120      125
Lys Ile Thr Glu Leu Arg Val Gln Lys His Ser Ser Lys Leu Leu Lys
130      135      140
Thr Lys Thr Glu Ala Pro Thr Thr Met Thr Tyr Pro Leu Lys Ala Thr
145      150      155      160
Ser Thr Val Lys Gln Ser Trp Asp Trp Thr Thr Asp Met Asp Gly Tyr
165      170      175
Leu Gly Glu Thr Ser Ala Gly Pro Gly Lys Ser Leu Pro Val Phe Ala
180      185      190
Ile Ile Leu Ile Ile Ser Leu Cys Cys Met Val Val Phe Thr Met Ala
195      200      205
Tyr Ile Met Leu Cys Arg Lys Thr Ser Gln Gln Glu His Val Tyr Glu
210      215      220
Ala Ala Arg Ala His Ala Arg Glu Ala Asn Asp Ser Gly Glu Thr Met
225      230      235      240
Arg Val Ala Ile Phe Ala Ser Gly Cys Ser Ser Asp Glu Pro Thr Ser
245      250      255
Gln Asn Leu Gly Asn Asn Tyr Ser Asp Glu Pro Cys Ile Gly Gln Glu
260      265      270

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Tyr Gln Ile Ile Ala Gln Ile Asn Gly Asn Tyr Ala Arg Leu Leu Asp  
 275 280 285  
 Thr Val Pro Leu Asp Tyr Glu Phe Leu Ala Thr Glu Gly Lys Ser Val  
 290 295 300  
 Cys  
 305

<210> 34  
 <211> 280  
 <212> PRT  
 <213> Mus musculus

<400> 34  
 Met Glu Ile Ser Ser Gly Leu Leu Phe Leu Gly His Leu Ile Val Leu  
 1 5 10 15  
 Thr Tyr Gly His Pro Thr Leu Lys Thr Pro Glu Ser Val Thr Gly Thr  
 20 25 30  
 Trp Lys Gly Asp Val Lys Ile Gln Cys Ile Tyr Asp Pro Leu Arg Gly  
 35 40 45  
 Tyr Arg Gln Val Leu Val Lys Trp Leu Val Arg His Gly Ser Asp Ser  
 50 55 60  
 Val Thr Ile Phe Leu Arg Asp Ser Thr Gly Asp His Ile Gln Gln Ala  
 65 70 75 80  
 Lys Tyr Arg Gly Arg Leu Lys Val Ser His Lys Val Pro Gly Asp Val  
 85 90 95  
 Ser Leu Gln Ile Asn Thr Leu Gln Met Asp Asp Arg Asn His Tyr Thr  
 100 105 110  
 Cys Glu Val Thr Trp Gln Thr Pro Asp Gly Asn Gln Val Ile Arg Asp  
 115 120 125  
 Lys Ile Ile Glu Leu Arg Val Arg Lys Tyr Asn Pro Pro Arg Ile Asn  
 130 135 140  
 Thr Glu Ala Pro Thr Thr Leu His Ser Ser Leu Glu Ala Thr Thr Ile  
 145 150 155 160  
 Met Ser Ser Thr Ser Asp Leu Thr Thr Asn Gly Thr Gly Lys Leu Glu  
 165 170 175  
 Glu Thr Ile Ala Gly Ser Gly Arg Asn Leu Pro Ile Phe Ala Ile Ile  
 180 185 190  
 Phe Ile Ile Ser Leu Cys Cys Ile Val Ala Val Thr Ile Pro Tyr Ile  
 195 200 205  
 Leu Phe Arg Cys Arg Thr Phe Gln Gln Glu Tyr Val Tyr Gly Val Ser  
 210 215 220  
 Arg Val Phe Ala Arg Lys Thr Ser Asn Ser Glu Glu Thr Thr Arg Val  
 225 230 235 240  
 Thr Thr Ile Ala Thr Asp Glu Pro Asp Ser Gln Ala Leu Ile Ser Asp  
 245 250 255  
 Tyr Ser Asp Asp Pro Cys Leu Ser Gln Glu Tyr Gln Ile Thr Ile Arg  
 260 265 270  
 Ser Thr Met Ser Ile Pro Ala Cys  
 275 280

<210> 35  
 <211> 21  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic oligonucleotide primer

<400> 35  
 tctctgtctc caagcccaca g



<210> 36

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide primer

<400> 36

ctttgaggag tctttgacc

19